[0069] What is claimed is

1. A method of programming industrial controllers, in particular motion controllers, where the user links control structures and function blocks with a graphical editor to form a motion control flowchart that can be visualized on a display device, comprising the following successive steps:

a) generating a structured textual language from the flowchart,

b) converting the structured textual language in a processor-independent pseudo-code,

c) loading the processor-independent pseudo-code into the controller,

d) converting the processor-independent pseudo-code into executable processor code,

where adequate programming language commands are made available to the user in' the flowchart editor, depending on the underlying machine configuration or hardware configuration.

2. The method according to claim 1, wherein appropriate graphical elements containing the function interface of the corresponding subprograms are automatically generated in flowchart notation from user-defined subprograms of the structured textual language.

3. The method according to claim 1, wherein the automatically generated graphical elements are used by the user as language elements of the motion control flowchart.

4. The method according to claim 1, wherein structured text according to IEC 6-1131 is used as textual language.

5. The method according to claim 4, wherein a user can switch at will between structured textual language, contact plan and/or function plan as forms of representation for formulating conditions.

6. The method according to claim 1, wherein there is at least one loop and/or at least one parallel branch as language elements in the motion control flowchart notation.

7. The method according to claim 6, wherein the individual commands are initiated in the same interpolator cycle within the respective parallel branch.

8. The method according to claim 1, wherein parameters for the function blocks are set by mask input in motion control flowchart notation.

9. The method according to claim 1, wherein function blocks are combined into modules which in turn appear as function blocks in motion control flowchart notation.

10. The method according to claim 9, wherein interleaved modules are possible in motion control flowchart notation.

11. The method according to claim 1, wherein multiple assignments are possible for the user for the assignment of variables in flowchart notation motion control in the function blocks.

12. The method according to claim 1, wherein function blocks representing functions requiring a period of time contain step-enabling conditions in motion control flowchart notation.

13. The method according to claim 1, wherein the graphical elements of the flowchart are positioned automatically.

14. The method according to claim 1, wherein the graphical elements of the flowchart are linked together automatically.

15. The method according to claim 1, wherein the flowchart can be displayed in an enlarged or reduced form in the display.

16. The method according to claim 1, wherein reconverting in flowchart notation is possible by means of marks in the textual language.

17. A device for programming industrial controllers, in particular motion controllers, where control structures and function blocks can be linked by a user by using a graphical editor to form a motion control flowchart that can be visualized on a display device, comprising the following successive steps:

a) generating a structured textual language from the flowchart,

b) converting the structured textual language in a processor-independent pseudo-code,

c) loading the processor-independent pseudo-code into the controller,

d) converting the processor-independent pseudo-code into executable processor code,

where adequate programming language commands are made available to the user on a display in the flowchart editor, depending on the underlying machine configuration or hardware configuration.

18. The device for programming according to claim 17, wherein appropriate graphical elements containing the function interface of the corresponding subprograms can be generated automatically in motion control flowchart notation from user-defined subprograms in structured textual language.

19. The device for programming according to claim 17, wherein automatically generated graphical elements can be used by a user as language elements of the motion control flowchart.

20. The device for programming according to claims 17, wherein IEC 6-1131 can be used as textual language.

21. The device for programming according to claim 20, wherein a user may switch as desired between structured textual language, contact plan and/or function plan as forms of representation in formulating conditions.

22. The device for programming according to claims 18, wherein there is at least one loop and/or at least one parallel branch as language elements in motion control flowchart notation.

23. The device for programming according to claim 22, wherein individual commands can be started in the same interpolator cycle within the respective parallel branch.

24. The device for programming according to claim 18, wherein parameters for function blocks are set by mask input in motion control flowchart notation.

25. The device for programming according to claim 18, wherein function blocks are combined into modules which in turn form a function block in motion control flowchart notation.

26. The device for programming according to claim 25, wherein interleaved modules are provided in motion control flowchart notation.

27. The device for programming according to claim 18, wherein multiple assignments are provided for the assignment of variables by the user in the function blocks in motion control flowchart notation.

28. The device for programming according to claim 18, wherein step-enabling conditions are provided in motion control flowchart notation for function blocks representing functions requiring a period of time.

29. The device for programming according to claim 18, wherein the graphical elements of the motion control flowchart can be positioned automatically.

30. The device for programming according to claim 18, wherein the graphical elements of the motion control flowchart can be linked together automatically.

31. The device for programming according to claim 18, wherein the motion control flowchart can be visualized in a reduced or an enlarged form in the display.

32. The device for programming according to claim 18, wherein reconverting in motion control flowchart notation is provided by marks in the textual language.